

Having described the invention, the following is claimed:

1. A contaminant detecting system for determining the presence of a contaminant in a fluid, comprising:

a capacitor having first and second conducting plates, said fluid being a dielectric therebetween; and

sensing means for sensing a change in an electrical property of the capacitor, said change in the electrical property varying according to the presence of the contaminant in the fluid.

2. A contaminant detecting system according to claim 2, wherein said sensing means includes a sensing circuit for sensing capacitance.

3. A contaminant detecting system according to claim 2, wherein said sensing circuit includes means for generating a digital value indicative of an input capacitance.

4. A contaminant detecting system according to claim 3, wherein said means for generating the digital value indicative of the input capacitance is selected from the group consisting of: a charge-transfer capacitance sensor IC and a capacitance-to-digital-converter (CDC).

5. A contaminant detecting system according to claim 1, wherein said system further comprises:

control means for receiving a measured value from said sensing means indicative of the electrical property of said capacitor.

6. A contaminant detecting system according to claim 5, wherein said control means includes:

means for comparing said measured value with a threshold value to determine whether a contaminant is present in the fluid.

7. A contaminant detecting system according to claim 6, wherein said control means determines the presence of a miscible contaminant if said measured value is greater than said threshold value.

8. A contaminant detecting system according to claim 6, wherein said control means determines the presence of a miscible contaminant if said measured value is less than said threshold value.

9. A contaminant detecting system according to claim 6, wherein said contaminant is a miscible contaminant selected from the group consisting of: blood, urine, soap, detergent, antimicrobial chemicals, and miscible soil.

10. A contaminant detecting system according to claim 5, wherein said control means includes:

means for detecting a spike in said measured value to determine whether a contaminant is present in the fluid.

11. A contaminant detecting system according to claim 10, wherein said control means determines the presence of an immiscible contaminant upon the detection of said spike.

12. A contaminant detecting system according to claim 11, wherein said immiscible contaminant is selected from the group consisting of: dirt, bone matter, skin, organ tissue, and immiscible soil.

13. A method for determining the presence of a contaminant in a fluid, comprising:

passing the fluid between a capacitor having first and second conducting plates, said fluid being a dielectric therebetween; and

determining a change in an electrical property of the capacitor, said change in the electrical property varying according to the presence of the contaminant in the fluid.

14. A method according to claim 13, wherein said electrical property is capacitance.

15. A method according to claim 13, wherein said method further comprises:

generating a measured value indicative of the electrical property of said capacitor.

16. A method according to claim 15, wherein said method further comprises:

comparing said measured value with a threshold value; and

determining whether a contaminant is present in the fluid in accordance with said comparison.

17. A method according to claim 16, wherein said method further comprises:

determining the presence of a miscible contaminant if said measured value is greater than said threshold value.

18. A method according to claim 16, wherein said method further comprises:

determining the presence of a miscible contaminant if said measured value is less than said threshold value.

19. A method according to claim 15, wherein said method further comprises:

determining whether a change in the measured value has produced a spike in the measured value.

20. A method according to claim 19, wherein said method further comprises:

determining the presence of an immiscible contaminant when said spike is detected.

21. A method according to claim 20, wherein said immiscible contaminant selected from the group consisting of: dirt, bone matter, skin, organ tissue, and immiscible soil.